AMENDMENTS TO THE CLAIMS

1. (Canceled)

2. (Currently amended) ~~The system of claim 1, further~~ A system for making a wavefront aberrator, comprising:

a layer of optical material comprising a monomer and at least one polymerization initiator;

two transparent plates, said optical material being contained between said plates; and

means for controlling the extent of curing of the optical material by a radiation source at predetermined sub-regions inside said optical material to thereby produce a wavefront aberrator having a varied index of refraction.

3. (Previously presented) The system of claim 2, further comprising a barrier between said plates confining said optical material within a predetermined volume.

4. (Currently amended) ~~The system of claim 1,~~ A system for making a wavefront aberrator, comprising:

a layer of optical material comprising a monomer and at least one polymerization initiator, and

means for controlling the extent of curing of the optical material by a radiation source at predetermined sub-regions inside said optical material to thereby produce a wavefront aberrator having a varied index of refraction;

said radiation source comprising a LED array panel having a plurality of LED elements operatively disposed to irradiate said optical material.

5. (Previously presented) The system of claim 4, said means for controlling the extent of curing comprising a control unit controlling the emission intensity and irradiation duration of each of said LED elements in the LED array panel.

6. (Previously presented) The system of claim 5, said means for controlling the extent of curing comprising a de-magnifier operatively disposed to image a predetermined area of the LED array panel onto a predetermined area of the optical material.

7. (Canceled)

8. (Currently amended) ~~The system of claim 7,~~ A system for making a wavefront aberrator, comprising:

a layer of optical material comprising a monomer and at least one polymerization initiator, and

means for controlling the extent of curing of the optical material by a radiation source at predetermined sub-regions inside said optical material to thereby produce a wavefront aberrator having a varied index of refraction;

said radiation source emitting radiation having at least one wavelength within the absorption band of the polymerization initiator;

said means for controlling the extent of curing comprising a spatial light intensity modulator operatively disposed to control the spatial distribution of the radiation emitted by said radiation source.

9. (Previously presented) The system of claim 8, the spatial light intensity modulator being selected from the group consisting of LCD array panel, photographic film, and film with a printed profile for transmitting the radiation.

10. (Canceled)

11. (Currently amended) ~~The system of claim 1,~~ A system for making a wavefront aberrator, comprising:

a layer of optical material comprising a monomer and at least one polymerization initiator, and

means for controlling the extent of curing of the optical material by a radiation source at predetermined sub-regions inside said optical material to thereby produce a wavefront aberrator having a varied index of refraction;

said radiation source comprising a laser unit operatively disposed to direct a laser beam at said predetermined sub-regions inside said optical material;

said means for controlling the extent of curing comprising a beam scan unit scanning independently in two dimensions to thereby address said predetermined sub-regions inside said optical material.

12. (Previously presented) The system of claim 11, said means for controlling the extent of curing further comprising an intensity control for the laser unit.

13. (Currently amended) ~~The system of claim 1,~~ A system for making a wavefront aberrator, comprising:

a layer of optical material comprising a monomer and at least one polymerization initiator, and

means for controlling the extent of curing of the optical material by a radiation source at predetermined sub-regions inside said optical material to thereby produce a wavefront aberrator having a varied index of refraction;

said means for controlling the extent of curing comprising a wavefront sensor operatively disposed to measure the radiation transmitted through the optical material.

14. (Previously presented) The system of claim 13, said means for controlling the extent of curing further comprising a computer in a feedback loop, said computer monitoring the radiation intensity and controlling the extent of curing by controlling the intensity and the duration of the radiation exposure.

15. (Canceled)

16. (Previously presented) The system of claim 2, wherein one of the transparent plates has refractive power selected from the group consisting of positive power with cylindrical

power, positive power without cylindrical power, negative power with cylindrical power, negative power without cylindrical power, and combinations thereof.

17. (Previously presented) The system of claim 2, at least one of the plates being rigid.

18. (Currently amended) The system of claim 2, wherein ~~the~~ at least one of the plates is comprised of a material which is removable by dissolving.

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Canceled)

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Canceled)

37. (Canceled)

38. (Previously presented) A system for making a wavefront aberrator, comprising:

a layer of optical material comprising a light-curable resin,

a radiation source comprising a LED array panel having a plurality of LED elements operatively disposed to irradiate said optical material; and

a control unit for controlling the extent of curing of the optical material by said radiation source at predetermined sub-regions inside said optical material to thereby produce an wavefront aberrator having a varied index of refraction.

39. (Previously presented) A system for making a wavefront aberrator, comprising:

a layer of optical material comprising a light-curable resin,

a radiation source comprising a laser unit operatively disposed to irradiate said optical material; and

a beam scan unit for controlling the extent of curing of said optical material by said radiation source at predetermined sub-regions inside said optical material to thereby produce a wavefront aberrator having a varied index of refraction.

40. (Previously presented) The system of claim 39, further comprising a radiation intensity monitor unit operatively disposed to measure the radiation transmitted through the optical material.

41. (Previously presented) The system of claim 40, further comprising a computer in a feedback loop, said computer capable of receiving input from said radiation intensity monitor unit and controlling the extent of curing by controlling said beam scan unit.

42. (Previously presented) A system for making a wavefront aberrator, comprising:

a layer of optical material comprising a light-curable resin,

a constant fluence radiation source; and

a spatial light intensity modulator interposed between said radiation source and said optical material, said spatial light intensity modulator being capable of generating a curing pattern for controlling the extent of curing of said optical material by said constant fluence radiation source at predetermined sub-regions inside said optical material to thereby produce a wavefront aberrator having a varied index of refraction.

43. (Previously presented) The system of claim 42 in which said spatial light intensity modulator comprises a computer-controlled LCD.

44. (Previously presented) The system of claim 42 further comprising a sensor, said sensor being capable of measuring an image transmitted through said optical material.

45. (Previously presented) The system of claim 44 further comprising a computer, said sensor being capable of producing an output signal that is capable of being processed by said computer.

46. (Previously presented) The system of claim 2, at least one of the plates being flexible.

47. (New) The system of Claim 38, 39, or 42 in which the light curable resin comprises a monomer and a polymerization initiator.

48. (New) The system of Claim 47 in which the monomer is selected from the group consisting of epoxides, urethanes, thiol-enes, acrylates, cellulose esters, and mercapto-esters.

49. (New) The system of Claim 2, 4, 8, 11, or 13 in which the monomer is selected from the group consisting of epoxides, urethanes, thiol-enes, acrylates, cellulose esters, and mercapto-esters.